

Research Article

Assessment of Knowledge, Attitude and Practice of Backyard Slaughtering System in Hawassa and Yirgalem Towns, Sidama Regional State, Ethiopia

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Keywords

• Abattoir; Attitude; Backyard slaughtering; Knowledge; Hawassa; Yirgalem

Abstract

A cross-sectional survey was carried out to assess the knowledge, attitudes, and practices of backyard slaughtering, and to investigate associated risk factors in Hawassa and Yirgalem towns, Sidama Regional state, Ethiopia. Out of 288 respondents in both study areas, 215 (74.65%) and 70 (24.3%) had knowledge about zoonosis and food borne diseases, respectively. Moreover, the knowledge of respondents toward zoonosis significantly varies with educational occupation and income levels ($p < 0.05$). Thereby, respondents at college level and above, and those work in civil servant having salary above 3,500 birr average monthly income had more knowledge towards zoonosis. The knowledge of respondents towards health problems significantly associated with the towns ($p < 0.05$). The result reveals that 26.6% and 12% respondents from Hawassa town and Yirgalem, respectively, had knowledge about food borne diseases. The attitudes of respondents willing to use abattoir for sheep and goats had statistically significant association with education level, occupation, and average monthly income ($p < 0.05$). Respondents at college level and above (87.32% and 78.14%), civil servant (84.56%), and persons earning above 3,500 birr monthly income (85.42%) had more attitudes to use sheep and goats abattoir. Out of the total respondents, 59 (20%) work on slaughtering cattle and 229 (80%) are assigned on slaughtering sheep and goats at their backyards. The practices of respondents significantly associated with family responsibility, sex, religion and occupations ($p < 0.05$). The current study revealed that there are numerous gaps about knowledge, attitude and practices of the residents regarding to zoonotic disease and abattoir usage that will in turn predisposing them to various health problems mainly to animal origin food borne diseases and other zoonosis. Therefore, educating the wider community about the importance of legal places for slaughtering and the risks associated with the backyard slaughtering is recommended. Moreover, further research should be conducted to fill the research gap in other parts of the country.

INTRODUCTION

Backyard slaughtering is the illegally killing or slaughtering of the animals for meat consumption without considering the animal welfare and it contributes its own role on food born disease [1]. The practice of backyard slaughter and street meat sales are the principal sites for bacterial contamination of meat. The higher incidence of *E. coli* is associated with poor hygiene as backyard slaughtering and street meat sales practices are popular. In addition, the hygienic practices in the abattoir and butcher shops are not as to the expected level and this could also contribute to the higher incidence of the organism [2].

Protecting public health is the reason to regulate backyard slaughter. Several serious infectious diseases, including avian influenza, *E. coli*, and salmonella can be transmitted through livestock and poultry in particular. In light of this risk, cities have a range of regulatory options ranging from education to prohibition. Slaughtering animals at the home and on site in urban environments poses opportunities for pathogen transmission from infectious animals (either bovine or poultry) to the environment, humans, and other animals. The urban household environment is not well suited for containment of pathogens from the slaughtering of animals or birds, including viscera, blood, and feces, and in particular may draw wild and

domesticated animals to the premises [3].

Ensuring food safety to protect public health remains a significant challenge in both developing and developed countries. Food borne diseases occur commonly in developing countries particularly in Africa because of the prevailing poor food handling and sanitation practices, inadequate food safety laws, weak regulatory systems, lack of financial resources to invest in safer equipment and lack of education for food-handlers [1]. Of the foods intended for humans, those of animal origin tend to be most hazardous unless the principles of food hygiene are employed [4].

Many emerging and re-emerging diseases of humans are caused by pathogens which originate from animals or products of animal origin. There are a number of zoonotic diseases that can be transmitted from animal to humans in various ways. Wide variety of animal species, both domestic and wild, acts as reservoirs for these pathogens, which may be viruses, bacteria or parasites [5]. Bacterial contamination of meat products are an unavoidable consequence of meat processing. Even if data regarding meat borne diseases in Ethiopia are extremely scarce, a few studies conducted in different parts of the country which shown the public health importance of several bacterial pathogens associated with foods of animal origin [6].

Abattoir provide information on the epidemiology of disease on livestock, to know to what extent the public is exposed to certain zoonotic disease and estimate the financial losses incurred through condemnation of affected organs and carcasses. Abattoir means a legal slaughter house designed for the purpose of killing animals, skinning, dressing and cutting up of carcass, wrapping for sale for human consumption with cooler and freezer storage and includes indoor confinement of animals while awaiting slaughter but, most people in Ethiopia do not use slaughter houses and they slaughter sheep and goats in their backyards due to traditional norms and lack of legislation [7-8].

However, round a research made on abattoir ends up in recommendation to protect backyard slaughtering which is a common practice in Ethiopia. It never been measured in terms of research why the society prefers backyard slaughtering and continue as a common practice other than rhetoric's regarding abattoir slaughtering capacity and other issues. Therefore, the current study is designed with the objectives of assessing factors that forces the society to practice backyard slaughtering and to assess knowledge and attitudes of the community on the risks associated with backyard slaughtering.

MATERIAL AND METHODS

Description of Study Area

The study was conducted in representative areas of Yirgalem and Hawassa towns. The location of study areas is at 271 km south of Addis Ababa. Geographically, the Sidama Regional state lies between 5°45' and 6°45' latitude, North and 38°21' and 39°1' East longitude. Sidama Regional state had a total population of 3,406,616 peoples of which the rural population accounts for 94.5% of the total inhabitants while urban population is about 5.5%. A total of 61,279 households were counted in the Sidama Regional state, which results in an average of 4.22 individuals to a household, and 57,469 housing units. The Sidama Regional state has an area of 6538.17 Km² square kilometer with a population density of 451.83 persons per one square kilometer. The economy of the Sidama Regional state is primarily based on agricultural production mostly characteristically crop-livestock mixed farming system [9].

Study Design and Population

A cross-sectional study involving simple random sampling was conducted to assess KAPS in both Hawassa and Yirgalem town's representatives (various stakeholders). Residents of cities and towns potentially involved in backyard slaughtering were main target groups including other individuals such as butchers, animal health professionals, community health workers, environmental health practitioners etc. Additionally, opinions of government officials from department of agriculture, health and city administration were contacted.

Sample Size and Sampling Techniques

Since backyard slaughtering practices were unknown in the study areas, almost 75% of the study populations were assumed to be involved in slaughtering either small ruminants or cattle at least once a year during the festivity. The sample size was calculated according to the formula set by Thrusfield [10].

$N = (Z^2) Pexp (1-Pexp)/d^2$ where,

$Z (1-\alpha/2)$ = Confidence level corresponding to 95% CI and precision 5%.

N = sample size

Pexp = expected prevalence

D = desired absolute precision,

According to the above formula, the sample size was calculated to be 288 persons.

Data Collection Tools and Techniques

Semi-structured questionnaires were prepared in English and translated to Amharic language for both study sites to collect information on knowledge, attitude and practice. Interview were conducted through using questioner based on basic information of respondents such as addresses, sex, age, family size, responsibility in family, educational level, religion, and average monthly income level of the respondents. Then, the questionnaire addresses about respondents knowledge, attitudes, and practices towards abattoir and backyard slaughtering. The knowledge level of respondents was assessed about backyard slaughtering, zoonosis, health problems, animal origin, food borne diseases, abattoir uses and legality of meat when purchasing from butchers shop.

The questionnaires were also translated into local language of "Sidamigna" and pre-tested for clarity and cultural acceptability in the sub-city. During pre-testing, additional information was gathered and some of the questionnaires were modified. Questioner survey was to investigate on public knowledge, attitudes and practices with potential risk factors for backyard slaughtering practice. The attitudes of respondents were also assessed based on preferences of ways and reasons for preferring either backyard or abattoir, the willingness of respondents to use if sheep and goat abattoir is there, reasons for not to use abattoir services, suggestion for if there were facility of modern abattoir to serve community properly. The practices of the participants were assessed about types of animals to slaughter at their backyards, their decisions if there were problems/lesions on the organs, importance of kircha, and solutions to stop backyard slaughtering.

Ethical considerations

Prior to interviewing the respondents, the first and foremost are greeting the individuals and asking their willingness/voluntary to respond the interview by introducing the aim of the study. Then, these were conducted by respecting their cultures, religions, traditions, beliefs and perspectives.

Data management and analysis

The collected data were entered in to Microsoft excel spreadsheet and then the data were transported to statistical software for analysis STATA (version 11.0). Descriptive and analytical methods were applied depending on the nature of data sets. Chi-Square testes were used to calculate significant differences among proportions of variables and associations between dependent and independent variables. In all calculation,

95% CI were computed and the 95% confidence level was used and results were considered significant at $p < 0.05$.

RESULT

The current finding indicates the proportion of Taeniasis 146 (51%), typhoid 2 (0.7%), TB 28 (9.7%), Hydatidosis 4 (1.4%), anthrax 39 (13.5%), and other diseases 69 (24%) as indicated in Table 1 below.

The knowledge level of the respondents toward zoonosis based on study towns, family responsibility, sex, age, education level, higher education level in the family, religion, family size, occupation and average monthly income indicated in table 2. Education level, higher education level in family, average monthly income and occupation showed significant difference ($p < 0.05$) on the knowledge of respondents toward zoonosis.

The overall proportions of the respondents encountered by food borne diseases were 24.2%. The study revealed that 24 (8.3%) of respondents were encountered by milk and its product, 45 (15.6%) meat and its product and 1 (0.3%) fish and its product table 3.

The knowledge of respondents on health problems of animal origin with food borne diseases were assessed based on study towns, family responsibility, sex, age, education level, higher education level in the family, religion, family size, occupation and average monthly income. Among these variables, the towns had statistically significant difference ($p < 0.05$) on the knowledge of the respondents towards health problems as indicated on table 4.

From survey result, the knowledge of the respondents towards legality of meat purchased from butcher shop was studied based on the study towns, family responsibility, sex, age, education, religion, family size, occupation and average monthly income. As indicated in table 5, there was no statistical difference ($p > 0.05$) at the knowledge of the respondents towards legality of meat purchased from butcher shop.

Attitudes of the respondents' willing to slaughter sheep and goat in abattoir was studied on towns, family responsibility, sex, age, education level, higher education level in the family, religion, family size, occupation and average monthly income of the respondents. The significant association ($p < 0.05$) was observed on education level, higher education level in family, occupation, and average monthly income (Table 6).

Attitudes of the respondents towards community abattoir use was studied based on towns, family responsibility, sex, age, education level, higher education level in the family, religion, family size, occupation and average monthly income as indicated

Table 1: Knowledge of the respondents on zoonotic diseases.

Zoonosis	Number of respondents	Percentage (%)
Taeniasis /tape worm	146	51
Typhoid	2	0.7
TB	28	9.7
Hydatidosis	4	1.4
Anthrax	39	13.5
Others	69	24

Table 2: Knowledge of respondents toward zoonosis.

Variables	Description	Total number of participants interviewed	No. of respondents knew about zoonosis'		χ^2	P-values
			n	%		
Town	Hawassa	188	138	73.4	0.446	0.504
	Yirgalem	100	77	77		
Family responsibility	Husband	120	94	78.3	1.872	0.392
	Wife	127	93	73.2		
	Children	41	28	68.3		
Sex of respondents	Male	151	117	77.5	1.344	0.246
	Female	137	98	71.5		
Age of respondents	Below 40 years	184	134	72.8	0.898	0.343
	Above 40 years	104	81	77.9		
Education	Illiterate	24	13	54.2	57.987	0.000
	Elementary	52	23	44.2		
	High school	70	47	67.1		
Higher education level with in family	Elementary	66	39	59.1	11.531	0.003
	High school	71	54	76		
	College and above	151	122	80.8		
	Elementary	66	39	59.1		
Religion	Orthodox	94	70	74.5	0.314	0.855
	Protestant	152	115	75.6		
	Muslim	42	30	71.4		
Occupation	Civil servant	149	129	86.6	23.461	0.000
	Private	118	74	62.7		
	Farmer	21	12	57.1		
	Civil servant	149	129	86.6		
Family size	Bellow 5	187	139	74.3	0.029	0.865
	Above 5	101	76	75.2		
	Bellow 5	187	139	74.3		
Average monthly income level	Less than 1000 birr	61	34	55.7	21.537	0.000
	1001-2500 br	101	72	71.3		
	2501-3500 br.	78	67	85.9		
	Above 3500 br.	48	42	87.5		

in table 7. Statistically significant association ($p < 0.05$) was observed between community abattoir use and education.

Attitudes of the respondents to prefer abattoir or backyard slaughtering based on the study towns, family responsibility, sex, age, and education level, higher education level in the family,

Table 3: Distribution of respondents encountered by food borne diseases.

Food type	No. of respondents diseased	Percentages (%)
Milk and its product	24	8.3
Meat and its products	45	15.6
Fish and its products	1	0.3
Total	70	24.2

Table 4: Knowledge of respondents on health problems of animal origin food borne diseases.

Variables	Description	Number of Interviewee	respondents encountered with animal origin food borne diseases		χ^2	P-value
			n	%		
Town	Hawassa	188	50	26.6	8.23	0.004
	Yirgalem	100	12	12		
Family responsibility	Husband	120	29	24.2	1.65	0.437
	Wife	127	27	21.3		
	Children	41	6	14.6		
Sex	Male	151	35	23.2	0.51	0.474
	Female	137	27	19.7		
Age (in years)	< 40	184	38	20.6	0.23	0.631
	> 40	104	24	23		
Education level	Illiterate	24	3	12.5	7.66	0.053
	Elementary	52	7	13.5		
	High school	70	12	17.1		
	College and above	142	40	28.2		
Higher education level	Elementary	66	14	21.2	0.056	0.972
	High school	71	16	22.5		
	College and above	151	32	21.2		
Religion	Orthodox	94	26	26.6	3.367	0.186
	Protestant	152	27	17.7		
	Muslim	42	9	21.4		
Occupation	Civil servant	149	37	24.8	3.636	0.162
	Private	118	19	16.1		
	Farmer	21	6	28.6		
Family size	Below 5	187	46	24.6	2.98	0.084
	Above 5	101	16	15.8		
Average monthly income	Less than 1000 br	61	9	14.5	0.059	0.059
	1001-2500 br.	101	19	18.8		
	2500-3500 br.	78	25	32		
	Above 3501 birr	48	9	18.7		

religion, family size, occupation and average monthly income indicated in table 8. The significant association was ($p < 0.05$) observed between abattoir or backyard slaughtering and towns, education level, occupation and average monthly income.

The respondents' slaughtering practices of cattle, sheep, and goat in their backyard distributed based in two study towns, family responsibility, sex, age, and education level, higher education level in the family, religion, family size, occupation and

average monthly income indicated in table 9. The statistically significant association ($p < 0.05$) was observed between slaughtering practices of cattle, sheep, and goat in their backyard with the family responsibility, sex, age, occupation and religion.

DISCUSSION

The knowledge proportions of the respondents about different types of zoonotic diseases are taeniasis 146 (51%), typhoid 2

Table 5: The knowledge of the respondents' towards legality of meat purchased from butcher shop.

Variables	Description	Total respondents interviewed about legality of meat	No. of respondent known about legality of meat		χ^2	P values
			n	%		
Town	Hawassa	188	50	26.6	0.377	0.539
	Yirgalem	100	30	30		
Family responsibility	Husband	120	37	31	1.322	0.516
	Wife	127	31	24.4		
	Children	41	12	29.3		
sex	Male	151	48	31.8	2.544	0.111
	Female	137	32	23.4		
Age	(<40)	184	51	27.7	0.009	0.97
	(>40)	104	29	27.9		
Education level	Illiterate	24	5	21	9.108	0.03
	Elementary	52	7	13.5		
	High school	70	19	27		
	College and above	142	49	34.5		
High education status in family	elementary	66	12	18.2	4.245	0.12
	High school	71	20	28.2		
	College and above	151	48	32		
Occupation	Civil servant	149	47	31.5	2.454	0.29
	Private	118	29	24.6		
	Farmer	21	4	19		
Family size	Below(<5)	187	52	27.8	0.002	0.98
	Above(>5)	101	28	27.7		
Average monthly income	Less than 1000 ETB	61	16	26	3.15	0.37
	1001-2500	101	24	23.7		
	2501-3500	78	22	28.2		
	Above 3500	48	18	37.5		

Table 6: Attitudes of the respondents' willing to slaughter sheep and goat in abattoir.

Variables	Description	Total number of participants interviewed	No. of respondents willing to use shoat abattoir		χ^2	P -value
			n	%		
Town	Hawassa	188	138	73.3	0.0119	0.913
	Yirgalem	100	74	74		
Family responsibility	Husband	120	92	77	1.2683	0.532
	Wife	127	92	72		
	Children	41	28	68		
Sex	Male	151	117	77.5	2.4504	0.117
	Female	137	95	69.3		
Age	<40 years	184	138	75	0.5060	0.477
	>40 years	104	74	71.2		
Education level	Illiterate	24	9	37.5	38.5505	0.000
	Elementary	52	29	55.8		
	High school	70	50	71.4		
	College and above	142	124	87.3		

Higher education level in family	Elementary	66	43	65.1	19.6531	0.000
	High school	71	51	71.8		
	College and above	151	118	78.1		
Religion	Orthodox	94	68	72.3	5.8907	0.053
	Protestant	152	124	81.6		
	Muslim	42	20	47.6		
Occupation	Civil servant	149	126	84.6	20.2018	0.000
	Private	118	75	63.6		
	Farmer	21	11	52.4		
Family size	Below 5	187	135	72.2	0.5524	0.457
	Above 5	101	77	76.2		
Average monthly income level	Less than 1000 birr	61	42	68.8	13.4075	0.004
	1001-2500 br.	101	84	83		
	2501-3500 br.	78	65	83		
	Above 3500 br.	48	41	85.4		

Table 7: Attitudes of the respondents towards community abattoir use.

Variables	Description	Total number of respondents interviewed	No. of respondents using abattoir		χ^2	p-values
			n	%		
Town	Hawassa	188	39	20.7	0.06160	0.804
	Yirgalem	100	22	22.8		
Family responsibility	Husband	120	26	21.7	2.3406	0.310
	Wife	127	23	18.1		
	Children	41	12	29.3		
Sex	Male	151	34	22.5	0.3394	0.560
	Female	137	27	19.7		
Age	Below 40	184	37	20.1	0.3507	0.554
	Above 40	104	24	23		
Education	Illiterate	24	11	45.8	16.9706	0.001
	Elementary	52	17	32.7		
	High school	70	10	14.3		
	College and above	142	23	16.2		
Higher education	Elementary	66	13	19.7	1.7641	0.414
	High school	71	19	26.7		
	College and above	151	29	19.2		
Religion	Orthodox	94	19	20.2	2.8572	0.240
	Protestant	152	29	19.1		
	Muslim	42	13	31		
Occupation	Civil servant	149	27	18	2.8978	0.235
	Private	118	27	23		
	Farmer	21	7	33.3		
Family size	Below 5	187	33	17.6	3.9880	0.046
	Above 5	101	28	27.7		
Average monthly income	Less than 1000 br	61	11	18	1.3150	0.726
	1001-2500	101	25	24.7		
	2501-3500	78	15	19.3		
	Above 3500	48	10	21		

Table 8: Attitudes of respondents to prefer abattoir or backyard slaughtering.

Variables	Description	Total number of participants interviewed	No. of respondents who prefer abattoir		χ^2	P-values
			n	%		
Town	Hawassa	188	61	32.5	9.0145	0.003
	Yirgalem	100	16	16		
Family responsibility	Husband	120	32	26.7	2.6895	0.265
	Wife	127	30	23.6		
	Children	41	15	36.6		
Sex of respondents	Male	151	44	29.1	0.9357	0.333
	Female	137	33	24.1		
Age of respondent	Below 40 years	184	46	25	0.7841	0.376
	Above 40 years	104	31	29.8		
Education level	Illiterate	24	15	62.5	27.7669	0.0000
	Elementary	52	19	36.5		
	High school	70	21	30		
	College and above	142	22	15.5		
Higher education level in family	Elementary	66	17	25.7	1.5771	0.455
	High school	71	23	32.4		
	College and above	151	37	24.5		
Religion	Orthodox	94	28	29.8	3.6554	0.161
	Protestant	152	34	22.4		
	Muslim	42	15	35.7		
Occupation	Civil servant	149	29	19.5	9.2121	0.000
	Private	118	39	33		
	Farmer	21	9	42.8		
Family size	Below 5	187	48	25.7	0.3103	0.577
	Above 5	101	29	28.7		
Average monthly income level	Less than 1000 birr	61	19	31.1	8.5659	0.036
	1001-2500 br.	101	35	34.6		
	2501-3500 br.	78	15	19		
	Above 3500 br.	48	8	16.7		

Table 9: Respondents slaughtering practices of cattle, sheep, and goats in their backyard.

Variables	Description	No. of participants interviewed	No. of respondents practices to slaughter in their backyard				χ^2	P-values
			Cattle (n)	%	Shoats (n)	%		
Town	Hawassa	188	44	23.4	144	76.6	2.8305	0.092
	Yirgalem	100	15	15	85	85		
Family responsibility	Husband	120	31	25.8	89	74	11.1431	0.004
	Wife	127	15	11.8	112	88		
	Children	41	13	31.7	28	68.3		
Sex	Male	151	44	29.1	107	70.8	14.5907	0.000
	Female	137	15	10.9	122	89		
Age	Bellow 40 years	184	31	16.8	153	83	4.1406	0.042
	Above 40 years	104	28	26.9	76	73		

Education level	Illiterate	24	6	18	75	2.6634	0.446
	Elementary	52	10	42	80.7		
	High school	70	10	60	85.7		
	College and above	142	33	109	76.7		
Higher education level in family	Elementary	66	16	50	75.7	0.8136	0.686
	High school	71	13	58	81.7		
	College and above	151	30	121	83		
Religion	Orthodox	94	15	79	84	7.3575	0.025
	Protestant	152	29	123	81		
	Muslim	42	15	27	64.3		
Occupation	Civil servant	149	29	120	80.5	7.0716	0.029
Family size	Private	118	21	97	82	0.1604	0.689
	Farmer	21	9	12	57		
	Bellow 5	187	37	150	80		
Monthly income level	Above 5	101	22	79	78	5.3009	0.151
	Less than 1000 birr	61	12	49	80		
	1001-2500 br.	101	14	87	86		
	2501-3500 br.	78	20	58	74		
	Above 3500 br.	48	13	35	73		

(0.7%), TB 28 (9.7%), hydatidosis 4 (1.4%), anthrax 39 (13.5%), and other diseases 69 (24%). The wide range of information about taeniasis may be due to long time related consumption of raw meat and expansion of information about the effect of eating raw meat through media and locally available professionals from time to time. However, the awareness on taeniasis (51%) in the current study area was lower than the finding of Girma et al. [11] who reported 89% in and around Addis Abebe. Lower level of awareness among the respondents about others zoonosis like typhoid and hydatidosis, may be due to lack of information about the diseases in the current study area. Awareness on hydatidosis in a current finding agrees with the finding of Tesfaye et al. [12] who reported 4% in Jimma.

The knowledge level of the respondents toward zoonosis based on study towns, family responsibility, sex, age, education level, higher education level in the family, religion, family size, occupation and average monthly income finding shows that the factors such as, education level, higher education level in family, average monthly income and occupation were showed significant difference ($p < 0.05$) on the knowledge of respondents toward zoonosis. This might be due to a clear cut information gap about health aspects in between well-educated and less educated individuals. Therefore, those individuals with better education could have better knowledge not only on zoonosis, but also other health aspects than less educated individuals from access and exposure differences towards different knowledge sources. There was statistically significance association ($p < 0.05$) between knowledge of the respondents about zoonosis and higher education level of the respondents in the family. Concerning the effect of education level of respondents on the knowledge

of zoonosis; the education standard and level of a given family may have uniformly/invariably affect the knowledge level of the family members due to difference and purity of the information on zoonosis and this resembled that less educated family could have less knowledge about zoonosis [13].

The statistically significance association ($p = 0.000$) between knowledge of the respondents about zoonosis were seen in civil servants, who have better knowledge rather than others (i.e., private and farmers). This could be attributed to the difference in exposure towards information and specific knowledge about zoonosis with better access of civil servants than private and farmers. According to the current finding, the statistically significant ($p = 0.000$) association was seen between knowledge and average monthly income obtained by respondents (table 2). As the level of income increased, the knowledge also increased from the lowest to the highest income obtained. Nevertheless, this does not necessarily mean that, individuals/respondents with low income had no knowledge on the zoonosis. However, the study showed the difference on the knowledge may or might be individuals with a better income seek a better product and services. This in turn could make them more experienced about the zoonosis and its consequence on their health concerns than those individuals with low income who may or might not keep themselves in touch with a better product and services.

The overall proportions of the respondents encountered by food borne diseases were 24.2%. The study revealed that 8.3% of respondents were encountered by milk and its product 15.6% meat and its product and 0.3% fish and its products. This might due to lack of easily perceiving information sources within the community and careless utilization of the animal origin product

among the respondents. The knowledge of respondents on health problems of animal origin with food borne diseases were surveyed based on study towns, family responsibility, sex, age, education level, higher education level in the family, religion, family size, occupation and average monthly income. Among these variables, the towns had statistically significant difference ($p < 0.05$) on the knowledge of the respondents towards health problems. This might be due to the difference of the duration of the town established, especially long period of Yirgalem town establishment which had most probably permanent residential (homogeneity) of peoples rather than short period establishment of Hawassa town, which had over flow of new people (diversified) those had different knowledge level (background, like educational, socio-economic and living style and religion), but in the Yirgalem, most of the people were permanent residents of city. In addition to the above significant result, the percentage summarized also revealed that the respondents encountered to the animal origin food borne disease were 50 (26.6%) and 12 (12%) in Hawassa and Yirgalem, respectively. The remaining percentage of the two towns' shows the respondents were not encountered animal origin of food borne disease as they responded. But, this might be the respondent did not had enough knowledge about animal origin food borne disease either they sick/ill from by eating those food which slaughtered at backyard or not knew risk associated from it.

As shown in the table 4, the knowledge of the respondent at their educational level categorized was marginal with p -value 0.053. This means the knowledge of the respondents on health problem from diseased animal product of food borne disease, even if it was not properly significant with the p -value but, the percentage of the respondent indicated that the respondents with their education level were encountered with animal origin food borne disease as they had knowledge on those diseases. This insignificance tells us the respondents in both towns had no sufficient knowledge on the animal origin food borne diseases. The other study variables were not significant, this did not mean that they had no association on the knowledge level of those food borne diseases. From survey result, the knowledge of the respondents towards legality of meat purchased from butcher shop was studied based on the study towns, family responsibility, sex, age, education, religion, family size, occupation and average monthly income. As indicated on the finding above there was no statistical difference ($p > 0.05$) in the knowledge of the respondents towards legality of meat purchased from butcher shop. This may be due to having better knowledge could make the individuals to have broad mind, differentiate the legality of their actions and others. This could invariably affect the knowledge level about the legality of meat of the respondents having in mind that the better the educated, the better the chance to access the legality of meat.

Attitudes of the respondents to prefer abattoir or backyard slaughtering based on the study towns, family responsibility, sex, age, and education level, higher education level in the family, religion, family size, occupation and average monthly income indicated in table 8. The significant association was ($p < 0.05$) observed between abattoir or backyard slaughtering and towns, education level, occupation and average monthly income. Almost all respondents knew the importance of abattoir and backyard

slaughtering and responsibility in the family respondents knew what mean by abattoir. Among the respondents, 41.67% of them were husband, 44.10% of them were wife and 14.24% of them were children. Knowledge on importance of abattoir were evaluated to be 250 (86.8%), 1 (0.35%), and 37 (12.8%) at slaughtering place of cattle, shoats, and (cattle, shoats and poultry) respectively. This indicated that majority of respondents were well aware of abattoir even they had not served for slaughtering due to different factors that hinder them. From total respondents, 98.26% knew about backyard slaughtering. This study has encompassed study variables like town (places of residents), responsibility of the respondents within family member, sex, age, education level, high education level, religion, occupation, family size and monthly income on the attitude of backyard slaughtering. The two towns (Hawassa and Yirgalem) have/had shown no statistical significance ($p > 0.05$) on the attitude of backyard slaughtering. This might be due to the relative nearness of the two towns that signifies the flow rate of information of the certain idea or issue within minimum period of time in between two towns. In addition to the above result, the percentage summary also revealed that the respondents willing to use abattoir for sheep and goats were 73.3% and 74.5% in Hawassa and Yirgalem respectively. The remaining possible percentage of the two towns responded their willingness to use backyard slaughtering for sheep and goats even if there would be abattoir.

As the finding reveals, the effect of family responsibility and towns has no statistical significant association ($p > 0.05$) on the attitude of the respondents on backyard slaughtering in Hawassa and Yirgalem towns. Their corresponding percentages were also summarized with the respective result of husband, wife and children; 77%, 72% and 68% willing to use sheep and goats abattoir if there would be. The remaining percentage of each parent within the family responded not willing to use sheep and goats abattoir even if there would be. However, among the family members husband and wife responded with more in terms of their children. This could be due to the absence of wide gap of information on this issue within family. The relative degree of understanding of family case could be more pronounced with the husband and wife than children and this intern causes the children to be somewhat careless than their parents. As summarized under Table 6: the sex has no statistically significance difference ($p > 0.05$) value on attitude of backyard slaughtering. Their percentage to use abattoir for both sexes showed relatively equal value (77.5% male and 69.3% female) among the respondents respectively. This might be due to equal access of information and almost similar mode of life within both towns between male and female respondents. However, male responded with more willingness to use abattoir may be due to their freely moving behavior and their low intension to cook in the house than female. In this study, age has no statistically significance difference ($p > 0.05$) on the attitude of backyard slaughtering. From the table 6: the respondents with their age below 40 years willing to use abattoir were 75% and above 40 years willing to use abattoir were 71.2% and the remaining percentage were not use abattoir. However age did not show statistical significance association on the attitude of the backyard slaughtering. The respondents below 40 years responded their willingness to use

sheep and goats abattoir than the respondents above 40 years. This slight difference might be due to the fact that age groups below 40 years may be more exposed to the current health information and technologies than those age groups above 40 years.

As the finding indicates (Table 6): education level revealed that there was strong statistically significant difference association ($p = 0.000$) on the attitude of respondents on backyard slaughtering in both towns of Hawassa and Yirgalem. The percentage of respondents willing to use sheep and goat abattoir were categorized with their education level (i.e., illiterate 37.5%, elementary 55.8%, high school 71.4%, college and above 87.3%) and the remaining percentage of each group responded not willing to use abattoir whenever it is available. In addition within the family as the level of education increased the willingness of the family members to use abattoir increased from elementary 65.2%, high school 71.8%, college and above 78.1%. In a general sense as persons became more educated she/he would be more informed, modernized and prepared to capture knowledge to differentiate right and wrong, the merit and demerits of certain ideas, the positive or negative side of the things than from less educated. According to this study, as the education level of the family members at whole increased, the better willingness to use sheep and goat abattoir also increased according to the above result. The finding with statistical significance association of educational level on the attitude of respondents on backyard slaughtering could be the result of their understanding capacity of the respondents as much as their education level. This actually indicated that the better educated the better the willingness to use sheep and goat abattoir and the finding agrees with the similar report of Girma et al [11].

In the current study area, religion has revealed strong statistical significant association ($p = 0.00$) between the attitude of respondents' and backyards slaughtering. The percentage summary indicates Orthodox; Protestant and Muslim religious members willing to use sheep and goat abattoir were 72.34%, 81.6%, and 47.6%, respectively. The remaining percentage of each religion groups responded not to use abattoir where ever it was available. This difference of attitude on backyard slaughtering might be due to the religious issue tending to support the concept of using abattoir in common or individual matter of considering some forbidden procedures from each religion for their spiritual uniqueness. Therefore, Muslim religion respondents' showed more tendency not to using sheep and goat abattoir, and 52.4% responded their willingness to use backyard slaughtering. This may signify that Muslim do not prefer to use abattoir due to their religious issue fearing that there might be the same place with Christian and similar procedure in the abattoir that their religion does not allow where there was no separate abattoir. The proportion of the respondents willing to use abattoir; civil servants, private, and farmers were 84.56%, 63.56% and 52.4% respectively. This might be due to more of civil servants are considered to be more educated than other groups which in turn signifies they are well informed about the health concerns and abattoir than other occupation groups. However, this does not mean some private were less educated and informed some civil servants about the importance of using abattoir.

As summarized under the Table 6, monthly income of the family showed significant difference ($p = 0.004$) on the attitude of the respondents. From the result summary of this study, the willingness of family members with average monthly income level of the respondents less than birr 1000 was 68.9%, birr 1001- 2500 was 83.2%, birr 2501-3500 was 83.3%, and above birr 3500 was 85.42%. The finding showed that, as much as average monthly income increased, the willingness to use abattoir increased slightly. This could be due to a person with a better income tends to have better life which in turn implies having better income enables the person to fulfill the service payments of the abattoir use. Then after, the person could have better chance of getting information about using the abattoir. The attitude of the respondents towards the community whether they always use abattoir or not showed statistically significant association ($p < 0.05$) in educational level and family size. This result indicated that the community with a better educational level might have better information about the importance of using abattoir than less educated community. On the other hand, as the family members increased (i.e., above 5 indicated increased willingness to use abattoir than less family size, i.e., below 5). This might be due to the reason that as the family size increases the quantity of meat consumption increase and the tendency to get different information availability meat from the abattoirs also increase.

Out of the total respondents of both towns (table 2), 211 respondents responded to use backyard slaughter and 77 respondents responded to use abattoir. From the current study finding, towns ($p = 0.003$), education level ($p = 0.000$), occupation ($p = 0.000$), average monthly income ($p = 0.036$) showed that statistically significant association ($p < 0.05$). The respondent in Hawassa town use abattoir more than respondent in Yirgalem town. This may be due to the difference in transport facility which is better in Hawassa than Yirgalem and there was also shortage of free land in Hawassa to use backyard slaughtering than Yirgalem. Other variables didn't show statistically significant difference. This might be more related to the education level, better occupation, and average monthly income which invariably affect the usage of the abattoir directly.

CONCLUSION

- As the current finding indicates, there are numerous gaps of knowledge, attitudes, and practices of the residents regarding to backyard slaughtering and abattoir usages in the study area. Most of the respondents that practices backyard slaughtering did not know different consequences of health problem that caused by animal origin food borne diseases and didn't know the importance of abattoir. There were limited abattoirs services in study sites and lack of available facilities and lack of awareness of the community/respondents towards zoonotic diseases. There were also lacks of supervision by concerned body when they practice backyard slaughtering, lack of enough veterinary public health professional advices regarding zoonosis and residents' lack of paying attention to individuals, community and environmental healthcare/sanitation. The culture and religious perspective as well as the price of slaughter also considered as the major constraints in the study area. The questionnaire survey

on public clearly indicated that generally poor knowledge and attitude of the disease and its sources of infection and transmission way to prohibit the above risk factors which influence the society to practice backyard slaughtering and the overall health well being of the society. According to the study conducted, the following recommendations are forwarded; The municipal of the towns should expand the number of abattoir with adequate services and build modern abattoir for the society by considering economic level of the wider/larger community which gives inspected meat and protect the environmental pollution.

- The responsible body should coordinate with the community to prohibit backyard slaughtering system, even by assigning Supervision body during the especial festivity (“Kircha”) in which the slaughtering practices more frequent.
- Educating the wider community about the consequence and the transmission way of zoonotic diseases which transmitted through consuming uninspected meat and meat products that was slaughtered at their backyards.

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